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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,421	09/26/2003	Tetsuo Matsumura	056203.49699C1	5725
23911	7590	05/13/2005	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			LE, DAVID D	
			ART UNIT	PAPER NUMBER
			3681	

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/670,421		MATSUMURA ET AL.	
	Examiner		Art Unit	
	David D. Le		3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20 and 23-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20 and 23-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/05/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This is the fourth Office action on the merits of Application No. 10/670,421, filed on 26 September 2003. Claims 20 and 22-28 are pending.

Documents

2. The following documents have been received and filed as part of the patent application:
 - Information Disclosure Statement, received on 09/26/03
 - Information Disclosure Statement, received on 11/05/04

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 April 2005 has been entered.

Claim Objections

4. Claim 20 is objected to because of the following informalities:
 - Line 22, the word "without" should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 20, 22, 23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 5,941,792 to Amendt et al. in view of U. S. Patent No. 4,449,416 to Huitema.**

Claims 20, 22, 23 and 26-28:

Amendt (column 3, line 14 – column 21, lines 55) discloses a method and an apparatus for regulating crawling movements of motor vehicles comprising:

- A control unit (13);
- An engine electronic control circuit (50);
- An input shaft (8);
- An output shaft (5);
- A gear drive transmission (4);
- A first clutch (3) mounted between an engine (2) and the gear drive transmission (4), for connecting or disconnecting torque transmitted from the engine to driving wheels (6a);

- Wherein the control unit (13) includes:
 - A driver's will-detecting means (being sensor 19a and/or 19b of the gear shift lever 18; sensor 32 of the gas pedal 30; sensor 41 of brake pedal 40) for detecting a driver's action (i.e., column 12, lines 10-56);
 - A creep control decision means (being the actuation of either the gas pedal 30, the brake pedal 40, or the expiration of the elapse time interval) for deciding whether or not creep torque generation should be discontinued when a vehicle running state is detected to be at a predetermined state (i.e., column 17, line 16 – column 22, line 2);
 - Wherein when the driver's will-detecting means detects that a brake release action, the first clutch starts to enter a creeping state, and a slipping-engagement of said first clutch causes said torque from the engine to be transmitted to generated a creep torque to let the vehicle move, and when said creep control detection means decides that creep torque generation should be discontinued during said creeping state, said creep torque generating means releases the slipping engagement of the first clutch to discontinue the generation of creep torque (i.e., column 17, lines 16-58), and a throttle angle of the vehicle is inherently controlled to be gradually changed to a desired value (being idle setting) upon release of the engagement of said first clutch (i.e., column 17, lines 59-65);

- Wherein after the vehicle has started to run by the creep torque generating means, when the driver's will-detecting means detects a brake engaging action the creep torque generating means releases the slipping-engagement of the first clutch to release the generation of creep torque (i.e., column 21, lines 5-55);
- Wherein the driver's will-detecting means detects brake releasing by a brake pedal switch (column 13, line 62 – column 14, line 17);
- Wherein said creep control completion decision means for deciding whether or not creep control has been finished when a vehicle speed is equal to or higher than a specified value (column 21, lines 5-55);
- Wherein said creep control completion decision means for deciding whether or not creep control has been finished when said transmission torque of the first clutch has reached specified value (column 21, lines 5-55); and
- Wherein said creep control decision means decides whether or not creep control has been finished when the duration of the slipping-engagement state of the first clutch has reached a specified length of time (column 6, lines 59-65).

Amendt, however, does not teach a dog clutch type of a torque transmission means disposed between an input shaft and an output shaft of said gear drive transmission.

Huitema (i.e., column 1, line 26 – column 5, line 61) teaches a transmission control system comprising a plurality of dog-clutches (48, 46, 50, 52) for transmitting torque, which are disposed between an input shaft and an output shaft of a gear drive transmission.

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify Amendt to include a pair of dog clutches such that each of the dog clutches engages the driven gear of the desired ratio, in view of *Huitema* in order to provide a greater improvement in transmitting power between an input shaft and an output shaft of a typical parallel, counter rotating, shafts type of transmission.

7. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amendt in view of *Huitema* as applied to claims 20-23 and 26-28 above, and further in view of U. S. Patent No. 5,913,377 to Ota et al.

Claims 24 and 25:

*Amendt in view of *Huitema** discloses all elements and limitations as set forth above. Regarding claims 24 and 25, the Amendt-*Huitema* combination lacks:

- Wherein the driver's will-detecting means is adapted to detect brake releasing by a pressure of a brake cylinder; and
- Wherein the driver's will-detecting means detects brake releasing by a brake pedal pressure sensor.

Ota (Fig. 1; column 4, lines 21-36), on the other hand, teaches a traction control system for a four-wheel drive vehicle comprising:

- A hydraulic pressure generator (PG);
- A master cylinder (MC);
- A braking operation detector (BM);
- A brake pedal pressure sensor (PD); and
- Wherein the brake pedal pressure sensor detects the hydraulic braking pressure discharged from the master cylinder.

It would have been obvious to one of ordinary skill in the art at the time this invention was made to further modify Amendt to include a pressure sensor of a brake cylinder as well as a brake pedal pressure sensor, in view of *Ota*, in order to provide a more effective means in controlling the slipping-engagement of the main clutch.

Response to Arguments

8. Applicant's arguments filed on 29 April 2005 have been fully considered but they are not persuasive.

Applicant argues that Amendt'792 reference does not teach or suggest the control of the throttle angle in relation to the release of the engagement of the first clutch.

Examiner respectfully disagrees for the reason that Amendt'792 (column 17, lines 59-65) discloses:

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“The engine torque M_{mot} can be relied upon, by regulation of idling of the engine, as an indication of the crawling torque. Thus, the load upon the engine increases as a result of regulation of idling while the clutch is at least partly engaged, and the regulation of idling entails an increase of engine torque substantially to an extent corresponding to the extent of increased load.”

Based on the above teaching of Amendt'792, it is inherent that when the clutch is released and the accelerator pedal is not depressed, the idling of the engine is gradually changed to a desired setting or the predetermined throttle angle, which corresponds with the desired idle setting.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 571-272-7092. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ddl

Charles A Marmorek 5/10/05

CHARLES A. MARMOREK
SUPERVISOR, PATENT EXAMINATION
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